

TECHNICAL BASIS FOR TIER I OPERATING PERMIT

DATE: December 6, 2002

PERMIT WRITER: Shawnee Yihong Chen

PERMIT COORDINATOR: Bill Rogers

SUBJECT: AIRS Facility No. 083-00001, TASCO, Twin Falls
Final Tier I Operating Permit

PERMITTEE:	The Amalgamated Sugar Company, LLC P.O. Box 127 Twin Falls, ID 83303-0127
AIRS FACILITY NO:	083-00001
STANDARD INDUSTRIAL CLASSIFICATION:	2063
DESCRIPTION:	Beet-sugar manufacturer
KIND OF PRODUCTS:	Sugar
RESPONSIBLE OFFICIAL:	Gary Pool
PERSON TO CONTACT:	Gary Pool
TELEPHONE NO:	(208) 733-4104
NO. OF FULL-TIME EMPLOYEES:	200 – 600
AREA OF OPERATION:	600 acres
FACILITY CLASSIFICATION:	A
COUNTY:	Twin Falls
AIR QUALITY CONTROL REGION:	063
UTM COORDINATES:	710.0, 4712.0
EXACT PLANT LOCATION:	2320 Orchard Drive, Twin Falls, Idaho

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LIST OF ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

acfm	actual cubic feet per minute
AIRS	Aerometric Information Retrieval System
Btu/lb	British thermal units per pound
CaO	calcium oxide
Ca(OH) ₂	calcium hydroxide
CFR	Code of Federal Regulations
CO	carbon monoxide
CO ₂	carbon dioxide
COM	Continuous Opacity Monitoring System
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EPA	U.S. Environmental Protection Agency
ft	feet or foot
gpm	gallons per minute
gr	grain (1 lb = 7000 grains)
gr/dscf	grains per dry standard cubic foot
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb(s)/hr	pounds per hour
MMBtu/hr	million British thermal units per hour
NO _x	nitrogen oxides
O ₂	oxygen
O&M	Operation and Maintenance
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter of 10 micrometers or less
POM	polycyclic organic matter
psi	pounds per square inch
PTC	permit to construct
SIP	State Implementation Plan
SO ₂	sulfur dioxide
SO _x	sulfur oxides
TDS	total dissolved solids
TASCO	The Amalgamated Sugar Company
T/day	tons per day
T/yr	tons per year (1 T = 2000 lb)
UTM	Universal Transverse Mercator
VOC	volatile organic compound

PUBLIC COMMENT/AFFECTED STATES/EPA REVIEW

As required by IDAPA 58.01.01.364, DEQ provided for public notice and comment, including a public hearing, on the draft Tier I operating permit for the TASCO facility located in Twin Falls, Idaho. Public comment packages, which included the application materials, the permit, and associated technical memorandum, were made available for public review at the Twin Falls Public Library and DEQ's state office in Boise and regional office in Twin Falls. The public comment period was provided from August 13, 2002 through September 13, 2002. A public hearing was held on September 12, 2002 at the College of Southern Idaho in Twin Falls.

Review of the site location information included in the permit application indicates the facility is located within 50 miles of the Nevada and Utah state borders. An *affected state* is defined by IDAPA 58.01.01.008.01 as: *"All states, whose air quality may be affected by the emission of the Tier I source and that are contiguous to Idaho; or that are within 50 miles of the Tier I source."* The states of Nevada and Utah were provided an opportunity to comment on the draft Tier I operating permit.

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit in accordance with IDAPA 58.01.01.362.

The DEQ has reviewed the information provided by TASCO regarding the operation of their facility in Twin Falls. This information was submitted based on the requirements of the Tier I operating permit in accordance with IDAPA 58.01.01.300.

2. SUMMARY OF EVENTS

On May 31 and September 1, 1995, and February 2, 1999, DEQ received the TASCO Tier I operating permit application and application updates for their beet-sugar manufacturing facility located in Twin Falls. The initial application and supplemental applications were determined administratively complete on September 25, 1995, and April 2, 1999, respectively. During the Tier I permitting process, DEQ received additional information from TASCO as needed.

The draft Tier I permit was issued for public comment on August 13, 2002. A public hearing was held in Twin Falls, Idaho on September 12, 2002. The public comment period ended on September 13, 2002. The comments were addressed by DEQ in a document entitled "State of Idaho Department of Environmental Quality Response to Public Comments on Draft Air Quality Tier I Operating Permit for The Amalgamated Sugar Company, Twin Falls, Idaho" (refer to Appendix C of this memorandum). The draft Tier I permit was revised in response to the comments and issued to EPA as a proposed Tier I operating permit for the 45-day review period required by IDAPA 58.01.01.366. The EPA provided no written objection to the permit.

3. BASIS OF THE ANALYSIS

The following documents were relied upon in preparing this memorandum and the Tier I operating permit:

- Tier I operating permit application and updates (May 31 and September 1, 1995, and February 3, 1999)
- EPA, Compilation of Air Pollutant Emission Factors, AP-42, 5th Edition, January 1995, Office of Air Quality Planning and Standards
- 40 CFR Part 70
- Guidance developed by the EPA and DEQ
- Title V permits issued by other jurisdictions
- Documents and procedures developed in the Title V Pilot operating permit program
- Information in the DEQ source file for the TASCO Twin Falls facility
- Other information submitted by TASCO during permit drafting
- C. David Cooper, Air Pollution Control, A Design Approach, Waveland Press, Inc. 1986, pp.190-191
- John Richards, *Control of Particulate Emissions*, Air Pollution Technology Institute Course 413, 1995
- Combustion Evaluation in Air Pollution Control, APTI Course 427, Draft Revision, March 1994

4. REGULATORY ANALYSIS - GENERAL FACILITY

4.1 Facility Description

4.1.1 General Process Description

Sugar beet processing operations consist of several steps, including diffusion, juice purification, evaporation, crystallization, dried pulp manufacturing, and sugar recovery from molasses. Descriptions of these operations are presented in the following paragraphs.

Prior to removing sucrose from sugar beets by diffusion, the cleaned and washed beets are sliced into long, thin strips called cossettes. The cossettes are conveyed to a continuous diffuser, in which hot water is used to extract sucrose. The sugar-enriched water that flows from the outlet of the diffuser is called raw juice and contains between 13% to 18% sugar. The raw juice proceeds to the juice purification operation. The processed cossettes, or pulp, leaving the diffuser is conveyed to the dried pulp manufacturing operation.

In the juice purification stage, non-sucrose impurities in the raw juice are removed so that the pure sucrose can be crystallized. First, the juice passes through screens to remove any small cossette particles. The juice is then heated to 80° to 85° C (176° to 185° F) and proceeds to the liming system. In the liming system tank, milk of lime [$\text{Ca}(\text{OH})_2$ aqueous solution] is added to the juice to absorb or adhere to the impurities. The juice is then sent to the first carbonation tank where carbon dioxide (CO_2) gas is bubbled through to precipitate the lime as insoluble calcium crystals. Lime kilns are used to produce the CO_2 and the lime used in carbonation; the lime is converted to milk of lime in a lime slaker. After filtration, the juice is softened. Then a small amount of sulfur dioxide (SO_2) is added to the juice to inhibit reactions that lead to darkening of the juice. Burning elemental sulfur in a sulfur stove produces the SO_2 or it is purchased in liquid form. Following the addition of SO_2 , the juice (known as thin juice) proceeds to the evaporators.

The evaporation process, which increases the sucrose concentration in the juice by removing water, is performed in a series of five evaporators. Steam from large boilers is used to heat the first evaporator, and the steam from the water evaporated in the first evaporator is used to heat the second evaporator, and so on through the five evaporators. After evaporation, the percentage of sucrose in the "thick juice" is 65% to 75%. Some of this thick juice is sent to storage tanks. Most of the thick juice is combined with crystalline sugars produced later in the process and dissolved in the high melter. The mixture is then filtered, yielding a clear liquid known as standard liquor, which proceeds to the crystallization operation.

Sugar is crystallized by low-temperature pan boiling. The standard liquor is boiled in vacuum pans until it becomes supersaturated. To begin crystal formation, the liquor is "seeded" with finely milled sugar. When the crystals reach the desired size, the mixture of liquor and crystals, known as massecuite or fillmass, is discharged to the mixer. From the mixer, the massecuite is poured into high-speed centrifugals, in which the liquid is centrifuged into the outer shell, and the crystals are left in the inner centrifugal basket. The sugar crystals are washed with pure hot water, sent to the granulator (which is a rotary drum dryer), and then sent to the cooling granulator. After cooling, the sugar is screened and then either packaged or stored in large silos for future packaging.

The liquid that was separated from the sugar crystals in the centrifugals is called syrup. This syrup serves as feed liquor for the second boiling step and is introduced back into a second set of vacuum pans. The crystallization/centrifugation process is repeated once again, resulting in the production of molasses.

The molasses produced in the third boiling step can be used in the production of livestock feed. This molasses can also be further desugarized using the separator process. The products of the separator process are "extract" (the high sugar fraction) and "concentrated separator by-product" (CSB) (the low sugar fraction). The extract can be stored in tanks or immediately processed in the sugar operation, like thick juice. The CSB is used as livestock feed in a liquid form or is added to the wet pulp.

Wet pulp from the diffusion process is another product of sugar beet processing. Some of the wet pulp is sold as cattle feed directly. However, most of the wet pulp is pressed to reduce the moisture content from about 95% to 75%. After pressing, the pulp may be sold as cattle feed or sent to the dryer. Before entering the rotary drum dryer, CBS or molasses is added to the pressed pulp. The pressed pulp is then dried by hot air in a horizontal rotating drum known as a pulp dryer. The pulp dryer can be fired by natural gas or coal. The resulting product is typically pelletized and is sold as livestock feed. The remainder of the dried pulp is sold as livestock feed in an unpelletized form.

4.1.2 Facility Classification

For the purposes of Tier I operating permit requirements, this facility is a major facility as defined by IDAPA 58.01.01.008.10 because the facility emits or has the potential to emit a regulated air pollutant in amount greater than or equal to 100 T/yr, and it emits or has the potential to emit a single regulated HAP in excess of 10 T/yr and a combination of regulated HAPs in excess of 25 T/yr. For the purposes of PSD permitting requirements, this facility is a major facility as defined by IDAPA 58.01.01.006.55 and 40 CFR 52.21 because the facility emits or has the potential to emit a regulated air pollutant in excess of 250 T/yr. The steam plant (Foster Wheeler boiler, B&W boiler, and Keeler boiler) is a designated facility in accordance with IDAPA 58.01.01.006.27(v). The Standard Industrial Classification code defining the facility is 2063, and the AIRS/AFS facility classification is A.

4.1.3 Area Classification

The facility is located in Twin Falls, which is in Twin Falls County. Twin Falls County is located within Air Quality Control Region 63. This area is designated unclassified for all state and federal criteria air pollutants.

4.1.4 Permitting History

Most emissions units in this facility were constructed prior to 1970; therefore, no PTC was required. Air Pollution Source Permits were issued on March 19, 1981, (No. 13-1480-0001) and on January 1, 1984 (No. 1480-0001). These air pollution source permits were issued by the Department of Health and Welfare and set forth certain operating requirements for the boilers and pulp dryers. A process slaker was constructed in 1988 to replace an old unit. This emissions unit was self-exempted from PTC requirements by TASCO.

4.1.5 Non-applicability Determination

See Section 12 of the operating permit.

Permit Condition 12.1 states that the pulp dryer and lime kilns are not fuel-burning equipment per definition under IDAPA 58.01.01.006.41. Therefore IDAPA 58.01.01.675, does not apply.

Per the information provided by the applicant, (see Permit Condition 12.3) the B&W boiler was constructed or modified before August 17, 1971. Therefore 40 CFR 60, Subpart D does not apply. Section 5.4.4.1 of this technical memorandum provides a more detailed explanation of Permit Condition 12.3.

4.2 FACILITY-WIDE PERMIT APPLICABLE REQUIREMENTS

Unless specified, the following requirements apply to all emissions units at the facility. The regulatory authority for each permit condition is cited in the permit.

4.2.1 Permit Requirement - Fugitive Emissions - [IDAPA 58.01.01.650-651, 5/1/94]

4.2.1.1 Applicable Requirement

Permit Condition 1.1 states that all reasonable precautions shall be taken to prevent PM from becoming airborne in accordance with IDAPA 58.01.01.650-651. The facility has potential fugitive emissions sources such as railcar unloading, railcar unloading, shredded and pelletized pulp storage and loadout, coal unloading, coal storage, coal loading, beet hauling, and road dust.

4.2.1.2 Monitoring, Recordkeeping, and Reporting

Permit Condition 1.2 states that the permittee is required to monitor and record the frequency and the methods used by the facility to reasonably control fugitive emissions. IDAPA 58.01.01.651 gives some examples of ways to reasonably control fugitive emissions which include, using water or chemicals, applying dust suppressants, using control equipment, covering trucks, paving roads or parking areas, and removing materials from streets.

Permit Condition 1.3 requires that the permittee maintain records of all fugitive emissions complaints received. In addition, the permittee is required to take appropriate corrective action as expeditiously as practicable after a valid complaint is received. The permittee is also required to maintain records, which shall include: the date each complaint was received; a description of the complaint; the permittee's assessment of the validity of the complaint; any corrective action taken; and the date the corrective action was taken.

To ensure that the methods are being used by the permittee to reasonably control fugitive emissions, whether or not a complaint is received, Permit Condition 1.4 requires that the permittee conduct periodic inspections of the facility. The permittee is required to inspect potential sources of fugitive emissions during daylight hours and under normal operating conditions. If the permittee determines that the fugitive emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee is also required to maintain records of the results of each fugitive emissions inspection.

Both Permit Conditions 1.3 and 1.4 require the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid complaint or determining that fugitive emissions are not being reasonably controlled meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

Monthly inspections are required by the permit. Records shall be kept in accordance with Permit Condition 1.11. Reporting shall be in accordance with requirements under Permit Condition 1.10 and Permit General Provisions 13.24 and 13.25.

4.2.2 Permit Requirement – Odorous Gas, Liquids, or Solids – [IDAPA 58.01.01.775-776, 5/1/94]

4.2.2.1 Applicable Requirement

Permit Condition 1.5 and IDAPA 58.01.01.776 both states: "No person shall allow, suffer, cause or permit the emission of odorous gases, liquids, or solids to the atmosphere in such quantities as to cause air pollution." This condition is currently considered federally enforceable until such time it is removed from the State Implementation Plan (SIP), at which time it will be a state-only enforceable requirement.

Food processing facilities, including sugar beet processing facilities, potentially have unique odors that are generated from heating vegetables. Potential odors from sugar beet processing facilities are from cooking beets, drying pulp, and processing water systems.

4.2.2.2 Monitoring, Recordkeeping, and Reporting

Permit Condition 1.6 requires the permittee to maintain records of all odor complaints received. If a complaint has merit, the permittee is required to take appropriate corrective action as expeditiously as practicable. The records are required to contain the date each complaint was received and a description of the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

Permit Condition 1.6 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of receiving a valid odor complaint meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

4.2.3 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625, 4/5/00]

4.2.3.1 Applicable Requirement

IDAPA 58.01.01.625 and Permit Condition 1.7 state that "(No) person shall discharge any air pollutant to the atmosphere from any point of emission for a period or periods aggregating more than three minutes in any 60 minute period which is greater than 20 percent opacity as determined . . ." by IDAPA 58.01.01.625. This provision does not apply when the presence of uncombined water, NO_x, and/or chlorine gas is the only reason(s) for the failure of the emission to comply with the requirements of this rule.

4.2.3.2 Monitoring, Recordkeeping, and Reporting

To ensure reasonable compliance with the visible emission rule, Permit Condition 1.8 requires that the permittee conduct routine visible emissions inspections of the facility. The permittee is required to inspect potential sources of visible emissions during daylight hours and under normal operating conditions. The visible emissions inspection consists of a see/no see evaluation for each potential source of visible emissions. If any visible emissions are present from any point of emissions covered by this section, the permittee must either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded.

If opacity is determined to be greater than 20% for a period or periods aggregating more than three minutes in any 60-minute period, the permittee must take corrective action and report the exceedance in its annual compliance certification and in accordance with the excess emissions rules in IDAPA 58.01.01.130-136. The permittee is also required to maintain records of the

results of each visible emissions inspection that must include the date of each inspection, a description of the permittee's assessment of the conditions existing at the time visible emissions are present, any corrective action taken in response to the visible emissions, and the date corrective action was taken.

It should be noted that if a specific emissions unit has a specific compliance demonstration method for visible emissions that differs from Permit Condition 1.8, then the specific compliance demonstration method overrides the requirement of Permit Condition 1.8. Permit Condition 1.8 is intended for small sources that would generally not have any visible emissions.

Permit Condition 1.8 requires the permittee to take corrective action as expeditiously as practicable. In general, DEQ believes that taking corrective action within 24 hours of discovering visible emissions meets the intent of this requirement. However, it is understood that, depending on the circumstances, immediate action or a longer time period may be necessary.

4.2.4 Permit Requirement – Excess Emissions – [IDAPA 58.01.01.130, 4/5/00]

4.2.4.1 Applicable Requirement

Permit Condition 1.9 requires that the permittee comply with the requirements of IDAPA 58.01.01.130-136 for startup, shutdown, scheduled maintenance, safety measures, upsets, and breakdowns. This section is fairly self-explanatory and no additional detail is necessary in this technical memorandum. It should, however, be noted that IDAPA 58.01.01, 133.02, 133.03, 134.04, and 134.05 are not specifically included in the operating permit as applicable requirements. These provisions of the *Rules* only apply if the permittee anticipates requesting consideration under Subsection 131.02 of the *Rules* to allow DEQ to determine if an enforcement action to impose penalties is warranted. IDAPA 58.01.01.131.01 states “*The owner or operator of a facility or emissions unit generating excess emissions shall comply with Sections 131, 132, 133.01, 134.01, 134.02, 134.03, 135, and 136, as applicable. If the owner or operator anticipates requesting consideration under Subsection 131.02, then the owner or operator shall also comply with the applicable provisions of Subsections 133.02, 133.03, 134.04, and 134.05.*” Failure to prepare or file procedures pursuant to IDAPA 58.01.01.133.02 and 134.04 is not a violation of the *Rules* in and of itself, as stated in Subsections 133.03.a and 134.06.b. Therefore, since the permittee has the option to follow the procedures in IDAPA 58.01.01.133.02, 133.03, 134.04, and 134.05; and is not compelled to, the subsections are not considered applicable requirements for the purpose of this permit and are not included as such.

The regulations governing excess emissions are currently state-only enforceable applicable requirements. IDAPA 58.01.01.131-136 will become federally enforceable upon approval by EPA as part of the state SIP.

4.2.4.2 Monitoring, Recordkeeping, and Reporting

The compliance demonstration method is contained within the text of Permit Condition 1.9. No further clarification is necessary here.

4.2.5 Permit Requirement - Open Burning - [IDAPA 58.01.01.600-616 (5/1/94)]

See Permit Condition 1.12.

4.2.6 Permit Requirement - Renovation and Demolition (Asbestos) - [40 CFR 61, Subpart M]

The permittee shall comply with all applicable portions of 40 CFR Part 61, Subpart M when conducting any renovation or demolition activities at the facility.

4.2.7 Permit Requirement - Regulated Substance for Accidental Release Prevention - [40 CFR 68]

See Permit Condition 1.14.

Any facility that has more than a threshold quantity of a regulated substance in a process, as determined under 40 CFR 68.115, must comply with the requirements of the Chemical Accident Prevention Provisions of 40 CFR Part 68 no later than the latest of the following dates:

- Three years after the date on which a regulated substance present above a threshold quantity is first listed under 40 CFR 68.130.
- The date on which a regulated substance is first present above a threshold quantity in a process.

4.2.8 Permit Requirement – Compliance Testing

If testing is required, the permittee is required to use the test methods listed in the following table to measure the pollutant emissions.

EPA REFERENCE TEST METHODS

Pollutant	Test Method*	Special Conditions
PM ₁₀	EPA Method 201.a and Method 202	
PM	EPA Method 5	
NO _x	EPA Method 7	
SO ₂	EPA Method 6	
CO	EPA Method 10	
VOC	EPA Method 25	
Opacity	EPA Method 9	If an NSPS source, use IDAPA 58.01.01.625 and Method 9; otherwise, IDAPA 58.01.01.625 only.

*or a Department-approved alternative in accordance with IDAPA 58.01.01.157

4.2.9 Permit Requirement – Fuel-burning Equipment – [IDAPA 58.01.01.676 – 677, 5-1-94]

4.2.9.1 Applicable Requirement

See Permit Condition 1.16 and 1.17.

4.2.9.2 Monitoring, Recordkeeping, and Reporting

Specific permit conditions apply to the TASCO Twin Falls facility fuel-burning equipment. The PM emissions limits and appropriate monitoring and recordkeeping requirements for compliance purposes are provided within each applicable section of the permit. For all other emissions units not specifically regulated in the permit, IDAPA 58.01.01.676 and 677 apply. Monitoring and recordkeeping for compliance purposes is required by Permit Condition 1.11.

4.2.10 Permit Requirement – Sulfur Content – [IDAPA 58.01.01.728(5-1-94)]

4.2.10.1 Applicable Requirement

See Permit Conditions 1.18 and 1.19.

4.2.10.2 Monitoring, Recordkeeping, and Reporting

The permittee is required to maintain supplier's certifications for sulfur content for each fuel shipment received. In cases where there is no supplier's certification, the permittee must perform an analysis in accordance with appropriate ASTM methodology.

4.2.11 Permit Requirement – Compliance Testing

See Permit Condition 1.19. This provision sets forth criteria required for any compliance testing required in the permit.

4.3 Hazardous Air Pollutants

Per information provided in TASCOS's Tier I application dated February 3, 1999, the potential to emit (PTE) total HAPs was approximately 28 T/yr. The PTE of acetaldehyde was approximately 20 T/yr. Therefore, the facility is a major facility with regard to HAPs in accordance with IDAPA 58.01.01.008.10. These HAPs are emitted from the Foster Wheeler boiler, B&W boiler, Keeler boiler, pulp dryer, South Belgian lime kiln, North Belgian lime kiln, and the main mill. The list of HAPs and their respective potential emissions can be found in Appendix A of this technical memorandum. At the time of this permitting action, there are no specific emission limits required for any HAPs.

4.4 Alternative Operating Scenarios

No alternative operating scenarios were proposed in the application.

4.5 Trading Scenarios

No emissions trading scenarios were requested in the permit application.

5. REGULATORY ANALYSIS - EMISSIONS UNITS

The permit arranges emissions units into groups, which may have one or more processes with similar applicable requirements. The emissions unit groups included in the permit are listed below.

Emissions Unit Group 1 - Foster Wheeler Boiler, includes:

Foster Wheeler boiler (S-B1)

Emissions Unit Group 2 - B&W Boiler, includes:

B & W boiler (S-B2)

Emissions Unit Group 3 - Keeler Boiler, includes:

Keeler boiler (S-B3)

Emissions Unit Group 4 - Pulp Drying, includes:

Pulp dryer (S-D1)

Emissions Unit Group 5 - Pellet Cooling, includes:

Pellet cooler No. 1 (S-D2)

Pellet cooler No. 2 (S-D3)

Emissions Unit Group 6 - Lime Kilns, includes:

South Belgian lime kiln (S-K1)

North Belgian lime kiln (S-K2)

Emissions Unit Group 7 - Process Slaker, includes:

Process slaker (S-K4)

Emissions Unit Group 8 - Drying Granulator, includes:

Drying granulator No.1 (S-W1)

Emissions Unit Group 9 - Cooling Granulator, includes:

No. 2 cooling granulator (S-W2)

Emissions Unit Group 10

Pulp dryer material handling baghouse

Lime kiln building material handling baghouses (2)

Main mill (roof vents)

Sulfur stove

Fugitive Emissions Sources include:

Railcar unloading coal for boiler house (F-B4)

Railcar unloading coal for pulp drying (F-D5)

Shredded and pelletized pulp storage and loadout (F-D6)

Coal unloading (F-O1)

Coal storage (F-O2)

Coal loading (F-O3)

5.1 Emissions Unit Group 1 - Foster Wheeler Boiler (S-B1)

5.1.1 Emissions Unit Description

Table 5-1: EMISSIONS UNIT INFORMATION

Emission Point/Source Identification	Emissions Unit(s)/ Process(es)	Emission Control Device
P-B1	Foster Wheeler coal-fired boiler	One Baghouse (A-B1)

The Foster Wheeler boiler provides steam for the generation of electricity and for sugar production processes in the main mill. The Foster Wheeler boiler was constructed or modified in 1973 and is subject to 40 CFR 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*.

The Foster Wheeler boiler has an allowable heat input rate of 280 MMBtu/hr, per existing Permit No. 13-1480-0001-01. The boiler is a coal-fired spreader stoker boiler, which produces 416 psi, 634 °F, super-heated steam, per inspection reports. The heat content of steam is 1,140 Btu/lb, per the application, Appendix G, P.1. The boiler efficiency is about 80%, per 1994 source test data. The PM emissions from the Foster Wheeler boiler are controlled by a baghouse manufactured by Joy Western Co. Additional operational information can be found in Appendix B of this memorandum.

Emissions from the Foster Wheeler boiler are created when combusting coal. The emissions from this emissions unit consist of PM, PM₁₀, SO_x, CO, NO_x, VOCs, and trace amounts of lead, arsenic, beryllium, cadmium, chromium, manganese, mercury, nickel, and polycyclic organic matter (POM).

Non-DEQ approved engineering source tests, at 93% of the maximum heat input rate were conducted for PM on December 12 and 13, 1994. The source test summary can be found in Appendix G, Source Test Summaries, of the 1995 application. The front half emission concentration was 0.02 gr/dscf at 8% oxygen, which is 20% of the applicable grain-loading standard of 0.100 gr/dscf at 8% oxygen. The PM emissions based on heat input, were 0.043 lb/MMBtu, which is 43% of 40 CFR 60.42's, standard of 0.10 lb/MMBtu.

Non-DEQ approved tests are the tests conducted by TASC0 without a DEQ-approved source test protocol.

The stack parameters for the Foster Wheeler boiler stack are as follows:

Stack Height:	157.5 ft
Stack Diameter:	6.6 ft
Stack Flow Rate:	80,000 - 90,000 acfm
Stack Temperature:	280 - 290°F

When the Foster Wheeler boiler was constructed or modified in 1973, it was a major modification at an existing major facility. However, PSD permitting requirements were not triggered because the boilers' construction predates PSD regulation.

5.1.2 Permit Requirements – 40 CFR 60, Subpart D

5.1.2.1 Applicability

See Permit Conditions 2.1 to 2.3. These requirements were taken from 40 CFR 60, Subpart D.

5.1.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Conditions 2.4 to 2.9, which were taken from 40 CFR 60, Subpart D; and 2.11 to 2.38, which were taken from 40 CFR 60, Subpart A.

Per information provided in pages 5-8 of TASCOS's 1995 application, an oxygen (O₂) monitor is used in the facility rather a CO₂ monitor.

40 CFR 60.8(d)/ Permit Condition 2.19; 40 CFR 60.11(e)(1), (3), and (5), and 60.13(c)/ Permit Conditions 2.25, 2.27, 2.29, and 2.34 may apply in the future if this boiler is modified.

5.1.2.3 Permit Requirement – Grain-Loading Standard - [IDAPA 58.01.01.677, 5/1/94; Permit No. 13-1480-0001-01, 3/19/81]]

5.1.2.4 Applicability

See Permit Condition 2.39.

5.1.2.5 Monitoring, Recordkeeping, and Reporting

As mentioned under Section 5.1.1, the emissions concentration from this source was 20% of the applicable grain-loading standard. In addition, on July 23, 2001, TASCOS submitted opacity CEM data from January 1, 2001 to May 22, 2001. The average opacity for that time period was less than 5%. Therefore, no source test is required for this permit term.

The following methods are required to demonstrate and ensure continuous compliance with the grain-loading standard:

5.1.2.6 Pressure Drop Across the Baghouse

See Permit Condition 2.43. Monitoring the pressure drop across the baghouse and conducting continuous opacity monitoring should provide adequate information on baghouse operating conditions. On July 23, 2001, DEQ received TASCOS's supporting information for revised pressure drop range in the permit. The submittal can be found in the public comment package.

5.1.2.7 New Source Performance Standards Requirements

The requirements under the New Source Performance Standards help to ensure that the permittee is in compliance with the grain-loading standard.

5.1.3 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625]

5.1.3.1 Applicability

See Permit Condition 2.40.

5.1.3.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 2.4.

5.1.4 Continuous opacity monitoring and its associated requirements are listed under 40 CFR 60, Subparts A and D.

5.2 Emissions Unit Group 2 - B&W Boiler

Table 5-2: EMISSIONS UNIT INFORMATION

Emission Point / Source Identification	Emissions Unit(s)/ Process(es)	Emission Control Device
P-B2	B&W boiler	One baghouse

5.2.1 Emissions Unit Description

The B&W boiler, in conjunction with the Foster Wheeler boiler, provides steam for the generation of electricity and for sugar production processes in the main mill. The boiler can be fired on coal, natural gas or a combination of the two fuels. The B&W boiler was constructed or modified before 1970, per the Title V operating permit applications dated 1995 and 1999.

The B&W boiler has an allowable heat input rate of 285 MMBtu/hr, per existing Permit No. 13-1480-0001-01. The boiler is a coal pulverized/natural gas horizontally-fired boiler that produces 268 psi, 488 °F, super-heated steam, per inspection reports. The heat content of the steam is 1,070 Btu/lb, per the application, Appendix G, P.2. The boiler efficiency is about 80%, per 1994 source test data. The PM emissions from the B&W boiler are controlled by a baghouse manufactured by Joy Western Co. Additional operational information can be found in Appendix B of this memorandum.

Emissions from the B&W boiler are created when combusting coal. The emissions from this emissions unit consist of PM, PM₁₀, SO_x, CO, NO_x, VOCs, and trace amounts of lead, arsenic, beryllium, cadmium, chromium, manganese, mercury, nickel, and POM.

Non-DEQ-approved engineering source tests, conducted at 66% of the maximum heat input rate, were conducted on for PM on December 12 and 13, 1994. The source test summary can be found in TASCO's 1995 application Appendix G, Source Test Summaries. The front half emission concentration was 0.05 gr/dscf at 8% oxygen, which is 53% of the applicable grain-loading standard of 0.100 gr/dscf at 8% oxygen.

The stack parameters for the B&W Boiler stack are as follows:

Stack Height:	217 ft
Stack Diameter:	9 ft
Stack Flow Rate:	90,000 - 100,000 acfm
Stack Temperature:	300 - 310°F

The B&W boiler is not subject to 40 CFR 60, Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971*, because the B&W boiler was not constructed, reconstructed, or modified after August 17, 1971, per the operating permit application.

5.2.2 Permit Requirement – Fuel-burning Equipment – [IDAPA 58.01.01.677 and 678]

See Permit Condition 3.1

5.2.2.1 Applicability

IDAPA 58.01.01.677 states: "A person shall not discharge into the atmosphere from any fuel-burning equipment in operation prior to October 1, 1979, or with a maximum rated input of less than ten (10) million BTU per hour, particulate matter in excess of the concentrations shown in the following table. The effluent gas volume shall be corrected to the oxygen concentration shown."

When two or more types of fuel are burned concurrently, the allowable emission shall be determined by proportioning the gross heat input and emission standards for each fuel.

Table 5.3 GRAIN-LOADING STANDARDS FOR MULTIPLE FUELS

Fuel Type	Allowable Particulate Emissions	Percent Oxygen
Coal only	0.100 gr/dscf	8%
The combination of coal and natural gas	$0.100 * X + 0.011 * Y$	8%
Gas only	0.015 gr/dscf	3%

For natural gas, correct 0.015 gr/dscf at 3% O₂ to grain-loading at 8% O₂:

$$C \text{ (gr/dscf, at 8\% O}_2\text{)} = 0.015 \text{ gr/dscf} \times (21-8)/(21-3) = 0.011 \text{ gr/dscf}$$

The grain-loading standard at 8% O₂ for the combination of natural gas and coal combustion can be expressed as the following:

$$0.100 * X + 0.011 * Y$$

Where:

- X: the percentage of total heating input derived from the combustion of coal;
Y: the percentage of total heating input derived from the combustion of natural gas.

References:

- "Combustion Evaluation in Air Pollution Control", EPA APTI Course 427, Draft Revision, March 1994, P.125.
- 40 CFR 60.43a(h)(1)

5.2.2.2 Monitoring, Recordkeeping, and Reporting

5.2.2.3 Compliance Test

See Permit Condition 3.6. The permittee is required to conduct a compliance test at worst-case normal operating conditions in accordance with IDAPA 58.01.01.157. Worst-case is defined under IDAPA 58.01.01.157.02.a, which takes consideration of fuel type (e.g. heating value, ash content of the coal, etc.)

Permit Condition 3.6 requires the permittee to record baseline data during the compliance test, which will be used to verify or/and establish the ranges for operating parameters (e.g., pressure drop across the baghouse).

5.2.2.4 Pressure Drop across the Baghouse, Fuel Type, and O&M manual

See Permit Conditions 3.4, 3.6, and 3.10. Monitoring the pressure drop across the baghouse and the fuel type, combined with the use of an O&M manual, will provide additional assurance of compliance with the grain-loading standard.

Information on maintenance can be found in Section 5C, p.5-10 of TASCO's August 1995 Tier I operating permit application.

Fuel type must be monitored to establish which grain-loading standard applies, as well as the specific monitoring requirements to determine compliance with the applicable standard.

To establish compliance with the grain-loading standard for natural gas combustion, the only monitoring requirement is to log the periods when the B&W boiler is fired exclusively on natural gas.

The permittee shall determine these periods by logging when the fuel type is changed; see Permit Condition 3.2. The allowable fuel types are natural gas only, coal only, or a combination of natural gas and coal.

For combusting coal only, the permittee is required to conduct a compliance test to demonstrate compliance with the 0.100 gr/dscf standard.

For combusting any combination of coal and natural gas, the grain-loading standard will be met so long as the grain-loading standard is met when combusting coal only, since combusting coal only is a worst-case scenario.

TASCO is required to develop an operations and maintenance (O&M) manual in Permit Condition 3.10.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11 and report in accordance with requirements under facility-wide permit conditions and general provisions.

When reviewing the O&M manual, the TASCO April 1, 1999, Tier I application may be useful.

5.2.3 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625, 4/5/00]

5.2.3.1 Applicability

See Permit Condition 1.7.

5.2.3.2 Monitoring, Recordkeeping, and Reporting

- When combusting natural gas only, visible emissions are not expected under normal operations. So, a visible emissions evaluation is not required under normal operation while fired by natural gas only. Permit Condition 3.2 requires recording the period when the boiler is fired by natural gas only.

- When combusting coal only, or any combination of coal and natural gas, weekly visible emissions evaluations are required; see Permit Condition 3.7.
- An "Emissions Observation" is when a non-certified or certified visible emissions reader observes an emission point to see if there are any visible emissions from that point.
- A "visible emissions Reading" means a certified visible emissions reader reads visible emissions from an emission point in accordance with IDAPA 58.01.01.625.
- A "visible emissions Evaluation" refers to when an emissions observation is conducted; then, if there is any level of visible emissions from the emission point, a visible emissions reading is also conducted.
- The requirements under Permit Conditions 3.5, 3.9, and 3.10 assure the proper operation of the boiler and its baghouse.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11 and to report in accordance with requirements under facility-wide permit conditions and general provisions.

5.3 Emissions Unit Group 3 - Keeler Natural Gas-fired Boiler

The Keeler natural gas-fired boiler was constructed or modified in 1968. Per the application, the boiler has a steaming rate of 80,000 pounds per hour (lb/hr). The steam generated by this boiler is used for the process.

5.3.1 Permit Requirement – Visible Emissions – [IDAPA 58.01.01.625 4/5/00, T]

5.3.1.1 Applicable Requirement

See Permit Condition 1.7.

5.3.1.2 Monitoring, Recordkeeping, and Reporting

Natural gas is considered a "clean" fuel with respect to PM emissions. The preamble to 40 CFR 60, Subpart Dc regulations at 54 FR 24792, state: *"The uncontrolled PM emissions from the combustion of natural gas in small steam generating units are very low. Uncontrolled PM emission levels of less than 9 ng/J (10⁻⁸ gram per Joule) (0.02 lb/million Btu) heat input are typical of natural gas-fired steam Generating units. Because of these low uncontrolled PM emission levels, the application of any type of PM control technology to small natural gas-fired steam generating units would impose significant costs for no benefit. Consequently, the use of any conventional PM control technology to reduce PM emissions from small natural gas-fired steam generating units is considered unreasonable and no further consideration has been given to the development of standards to limit PM emissions from these units."* DEQ staff does not foresee that normal operations of natural gas combustion will cause a violation of the 20% opacity standard. Monthly visible emissions inspections as required by Permit Condition 1.8 and the limit on the fuel type as required by Permit Condition 4.2 are sufficient to ensure the permittee is in compliance with Permit Condition 1.7.

The permittee shall remain in compliance with reporting requirements under facility-wide permit conditions and general provisions of the permit.

5.3.2 Permit Requirement – Fuel-burning Equipment – Grain-loading Standard - [IDAPA 58.01.01.675, 4/5/00]

5.3.2.1 Applicable Requirement

See Permit Condition 4.1.

5.3.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 4.2.

5.4 Emissions Unit Group 4 - Pulp Dryer

Table 5.4: EMISSIONS UNIT INFORMATION

Emission Point / Source Identification	Emissions Unit(s)/ Process(es)	Emission Control Device
P-D1A	74.5 ton-per-hour process weight input rate pulp dryer (S-D1)	One cyclone and one spray-impingement-type scrubber in series
P-D1B		One cyclone and one spray-impingement-type scrubber in series

5.4.1 Emissions Unit Description

The direct-fired pulp dryer is used to dry pressed beet pulp. The dryer is primarily coal fired. Exhaust gasses from the dryer are split into two streams. Each stream passes through a cyclone and a spray-impingement-type scrubber in series. Per information provided in TASCO's submittal dated February 3, 1999, the dryer has a design capacity of 74.5 tons per hour process weight rate. Process weight input rate is defined in IDAPA 58.01.01.006.81.

Emissions from the pulp dryers consist of PM, PM₁₀, SO_x, CO, NO_x, VOCs, and trace amounts of lead, arsenic, beryllium, cadmium, chromium, manganese, mercury, nickel, POM, acetaldehyde, acrolein, benzene, formaldehyde, naphthalene, propylene, toluene, methyl ethyl ketone, and xylene.

Non-DEQ approved engineering source tests were conducted for PM on October 5, 6, 11, 24, 26, and 27, 1994. The source test summary can be found in TASCO's 1995 application, Appendix G, Source Test Summaries. The highest average emissions rate was 9.31 lb/hr from the front half and 6.42 lb/hr from the back half. The process weight emissions limitation based on throughput, which was at 78% of maximum capacity, during source test was 46 lb/hr. The emissions rate was 20% of the process weight limitation.

The stack parameters for the pulp dryer stack are as follows:

Stack Height:	82 ft
Stack Diameter:	8 ft
Stack Flow Rate:	29,200 - 43,800 acfm
Stack Exit Temperature:	133 - 199°F

5.4.2 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625, 4/5/00; Permit No. 1020-0001, p.2 of 6, limit 1.2, 2/14/84]

5.4.2.1 Applicability

See Permit Condition 1.7.

5.4.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 5.6

A weekly visible emissions evaluation is required for this emissions unit. This unit has a PTE of PM₁₀ of 212 T/yr per the tier I application.

An "emissions observation" is when a non-certified or certified visible emissions reader observes an emission point to see if there are any visible emissions from that point.

A "visible emissions reading" means a certified visible emissions reader reads visible emissions from an emission point in accordance with IDAPA 58.01.01.625.

A "visible emissions evaluation" refers to when an emissions observation is conducted; then, if there is any level of visible emissions from the emission point, a visible emissions reading is also conducted.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11 and report in accordance with requirements under facility-wide permit conditions and general provisions of the permit.

5.4.3 Permit Requirement – Process Weight – [IDAPA 58.01.01.703]

5.4.3.1 Applicability

See Permit Condition 5.1.

5.4.3.2 Monitoring, Recordkeeping, and Reporting

Compliance Test

See Permit Condition 5.4

Non-DEQ approved source tests were conducted in October 1994. Since this a relatively large emissions unit, a source test is required to verify and/or establish operating ranges of operating parameters of the control device. The source test shall be conducted at worst-case normal operating condition in accordance with IDAPA 58.01.01.157. Worst-case is defined under IDAPA 58.01.01.157

Simultaneous source testing of all the stacks from one single dryer was conducted in other states to ensure the reliability of test results. DEQ may request this in a test protocol if deemed necessary.

Pulp Dryer Production Rate Monitoring

Permit Condition 5.7 requires TASC0 to monitor the throughput or process weight input rate, which will be used to calculate process weight limitations and emissions from the dryer. This data will be used to demonstrate compliance with Permit Condition 5.1.

Monitoring Parameters of Control Devices

Monitoring the pressure drop of each cyclone is not necessary. However, annual physical inspections of the cyclones are required under Permit Condition 5.11.

The pressure drop across the scrubber is important, as it is the force that pushes flue gasses through the water and causes the particulates in the gas to be scrubbed out. Water flow of the scrubber, in gallons per minute (gpm), is another factor that will affect performance. Monitoring these two factors is required under Permit Conditions 5.8, 5.9, and 5.12.

As discussed in *Air Pollution Control, A Design Approach* (C. David Cooper, Waveland Press, Inc. 1986, pp.190-191), it is necessary to keep the concentration of suspended particulates and total dissolved solids (TDS) in the recirculated water below a certain level to prevent significant re-entrainment. The pressure of the water spray affects the size of the water drop and consequently affects the efficiency of the scrubber to capture the particulates. Currently, no data has been provided by TASCO concerning the concentrations of suspended particulates and TDS. Permit Condition 5.12, Bullet 3 requires TASCO to address these two parameters.

The emissions from the boilers in this factory are controlled by the baghouse. The emissions from the coal-fired boilers have no impact on the dryer's scrubber water. The total concentration of TDS and suspended solids may be low enough as to not cause significant impact on the dryer's emissions. TASCO's 1994 source tests indicated that the emissions from the dryer were 20% of the allowable process weight limitations.

TASCO is currently required by Permit Condition 5.9 to monitor and record the total concentration of TDS and suspended solids in the water. Each year, in general, TASCO starts a campaign in mid-September, and runs the campaign through March of the following year. The recirculated water in the scrubber is cleaner at the beginning of campaign and gets dirtier towards the end of campaign. Therefore, more frequent water sampling is required during the last two months of campaign. The frequency of the TDS monitoring under Permit Condition 5.9 may be reduced based on additional information provided by TASCO's O&M manual required under Permit Condition 5.12.

More information on maintenance can be found in Section 5C of TASCO's August 1995 Tier I operating permit application.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under facility-wide permit conditions and general provisions of the permit.
O&M Manual and Annual Maintenance

See Permit Conditions 5.3, 5.11, and 5.12.

These permit conditions provide the mechanism to incorporate the source test results into the O&M manual.

5.4.4 The Grain-loading Limit of 0.1 gr/dscf - [Permit No. 1480-0001, p. 2 of 6, limit 1.1, 2/14/84]

5.4.4.1 Non-Applicability

Per information contained in DEQ's source file for this facility, 0.1 gr/dscf was used as an emission limit in Permit No. 1480-0001 as a means to demonstrate compliance with process weight PM emissions limitations. Because process weight PM emissions limits apply to a process, both pulp dryers must be considered for applicability purposes. Performing the calculations shows that process weight is more restrictive than the allowable grain-loading limit of 0.1 gr/dscf. Therefore, the grain-loading emissions limit is not the applicable requirement for the pulp dryers, process weight is. A compliance test is required to demonstrate compliance with process weight (IDAPA 58.01.01.703).

5.5 Emissions Unit Group 5 - Pellet Cooling

5.5.1 Emissions Unit Description

Emissions Unit Group 5 consists of the emissions units and related emissions control equipment as shown in the following table.

Table 5.5 EMISSIONS UNIT INFORMATION

Emission Point / Source Identification	Emissions Unit(s)/ Process(es)	Emission Control Device
P-D2/3	8.3 tons of pellet per hour pellet cooler No. 1 (S-D4)	One cyclone A-D2/3
	8.3 tons of pellet per hour pellet cooler No. 2 (S-D5)	

The pellet coolers were all manufactured by California Pellet Mill. Emissions from the pellet coolers consist of PM and PM₁₀. The two pellet coolers' emissions are controlled by one cyclone.

The stack parameters for both Pellet Cooler No. 1 and No. 2 are as follows:

Stack Height:	79 ft
Stack Diameter:	5 ft
Stack Flow Rate:	13,200 - 19,800 acfm
Stack Exit Temperature:	62 - 92°F

Per information provided by TASCO on February 2, 1999, each pellet cooler has the same capacity of 8.3 T/hr process weight input rate.

5.5.2 Permit Requirement – Visible Emissions – [IDAPA 58.01.01.625 (4/5/00)]

5.5.2.1 Applicability

See Permit Condition 1.7.

5.5.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.5.3 Permit Requirement – Process Weight – [IDAPA 58.01.01.703, 4/5/00]

5.5.3.1 Applicability

See Permit Condition 6.1.

5.5.3.2 Monitoring, Recordkeeping, and Reporting

Per the information in TASCO's 1995 Tier I operating permit application, Appendix G, the emission rate for pellet coolers at maximum input rate is 6.12 lb/hr (2 x 3.06 lb/hr), which is 57% of process weight PM emissions limitation. Requirements under Permit Conditions 6.2 and 6.3 are sufficient to ensure compliance with the process weight. No monitoring of throughput or compliance testing is necessary. Procedures for pellet coolers can be found in TASCO's 1995 Tier I operating permit application Section 5C.

5.6 Emissions Unit Group 6 - Lime Kilns (2)

Table 5-6: EMISSIONS UNIT INFORMATION

Emission Point/ Source Identification	Emissions Unit(s) Identification	Emission Control Device
P-K1/2A, P-K1/2B, P-K1/2C	102 tons lime rock per day, coke-fired South Belgian Lime Kiln, 9.2 tons of coke per day (S-K1)	One gas washer and then two carbonation tanks in parallel
	238 tons lime rock per day, coke-fired North Belgian Lime Kiln, 21 tons coke per day (S-K2)	Two gas washers in series and then two carbonation tanks in parallel
P-K1/2D	For both lime kilns	By-pass scrubber while charging the kiln

The process weight rate limitation is applied to each process in Emissions Unit Group 6 individually.

5.6.1 Emissions Unit Description

The coke-fired South Belgian lime kiln and North Belgian lime kiln were manufactured by SS Burke & Co., and Larrow Construction, respectively. These lime kilns were constructed prior to 1970. Emissions from the coke kilns include PM, PM₁₀, SO_x, CO, NO_x, VOCs, and trace amounts of lead, arsenic, beryllium, cadmium, chromium, manganese, mercury, nickel, and POM. The process flow diagram of the kilns can be found in TASCO's 1995 Tier I operating permit application included in the public comment package.

The exhaust gas from the coke kilns is pulled from the top of the kiln. The exhaust gas passes through gas washers, which are used to scrub and cool the exhaust gas on its way to the compressor. The compressors convey the CO₂ gas to the first and second carbonation tanks in parallel (although there are three carbonation tanks, only two are used at any given time). The gas is bubbled through the juice from the bottom of the carbonation tanks. During startup, the exhaust gas charges through the scrubber (P-K1/2D).

The stack parameters for first carbonate tank are as follows:

Stack Height:	164 ft
Stack Diameter:	2 ft
Stack Flow Rate:	12,000 - 16,000 acfm
Stack Exit Temperature:	160 - 175°F

The stack parameters for second carbonate tank are as follows:

Stack Height:	52.5 ft
Stack Diameter:	0.5 ft
Stack Flow Rate:	Unknown
Stack Exit Temperature:	Unknown

The stack parameters for third carbonate tank are as follows:

Stack Height:	52.5 ft
Stack Diameter:	3 ft
Stack Flow Rate:	Unknown
Stack Exit Temperature:	Unknown

5.6.2 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625, 4/5/00]

5.6.2.1 Applicability

See Permit Condition 1.7.

5.6.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.6.3 Permit Requirement – Process Weight – [IDAPA 58.01.01.702, 4/5/00]

5.6.3.1 Applicability

See Permit Condition 7.1.

5.6.3.2 Monitoring, Recordkeeping, and Reporting

The information in TASCO's 1995 Tier I operating permit application, Appendix G, indicates the PM emission rate for the South Belgian lime kiln, at maximum production, is 0.36 lb/hr ($0.084 \text{ lb/ton lime rock} \times 102 \text{ tons/day} / 24 \text{ hr/day} = 0.36 \text{ lb/hr}$), which is well below process weight rate emissions limitation of 10.8 lb/hr. The information in the application also indicates the PM emission rate for North Belgian lime kiln, at maximum production, is 0.83 lb/hr ($0.084 \text{ lb/ton lime rock} \times 238 \text{ tons/day} / 24 \text{ hr/day} = 0.83 \text{ lb/hr}$), which is well below process weight rate emissions limitation of 16.2 lb/hr. Requirements under Permit Conditions 7.2 and 7.3 are sufficient to ensure the permittee is in compliance with the process weight limitation. No throughput monitoring or compliance testing is necessary.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under facility-wide permit conditions and general provisions of the permit.

Monitoring maintenance procedures for lime kilns can be found in TASCO's 1995 Tier I operating permit application, Section 5C. This can be used as a reference for inspectors.

5.7 Emissions Unit 6 - Process Slaker

5.7.1 Emissions Unit Description

Table 5-7 EMISSIONS UNIT INFORMATION

Emission Point / Source Identification	Emissions Unit(s) Identification	Emissions Unit(s) Identification	Emission Control Device
P-K 3	Maximum 9.0 ton CaO per day	Flume slaker (S-K3)	None
P-K 4	Maximum 190 ton CaO per day	Process slaker (S-K4)	One cyclone

The facility operates two lime slakers to produce milk of lime from crushed calcium oxide (CaO) rocks and water. The flume slaker is an insignificant activity per the information provided in the TASCOS application. Lime slakers are batch processes, per the application. The production rate of the process slaker is 190 tons CaO per day, per TASCOS 1995 Tier I operating permit application. The process slaker was manufactured by Yanke and constructed in 1988. The emissions from the process slaker are controlled by a cyclone.

The stack parameters for the process slakers' stack are as follows:

Stack Height:	36 ft
Stack Diameter:	1.0 ft
Stack Flow Rate:	Unknown
Stack Exit Temperature:	Unknown

5.7.2 Permit Requirement – Visible Emissions – [IDAPA 58.01.01.625, 4/5/00]

5.7.2.1 Applicability

See Permit Condition 1.7.

5.7.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.7.3 Permit Requirement – Process Weight – [IDAPA 58.01.01.702, 4/5/00]

5.7.3.1 Applicability

See Permit Condition 8.1.

5.7.3.2 Monitoring, Recordkeeping, and Reporting

The information in TASCOS 1995 Tier I operating permit application, Appendix G, indicates the maximum PM emission rate for the flume slaker is 0.83 lb/hr, which is well below the process weight PM emissions limitation of 2.4 lb/hr. The information in the application also indicates the maximum PM emission rate for the process slaker is 0.8 lb/hr, which is well below the process weight PM emissions limitation of 12.3 lb/hr. Requirements under Permit Conditions 8.2 and 8.3 are sufficient to ensure the permittee is compliance with the process weight limitation. No throughput monitoring or source testing is necessary.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under permit conditions and general provisions.

Monitoring maintenance procedures for lime slakers can be found in TASCO's 1995 Tier I operating permit application (pp. 5-45 to 5-46). This can be used as a reference for inspectors.

5.8 Emissions Unit 8 - Drying Granulator

5.8.1 Emissions Unit Description

Table 5-8: EMISSIONS UNIT INFORMATION

Emission Point/ Source Identification	Emissions Unit(s) Identification	Emission Control Device
P-W1	1,100 tons sugar per day drying granulator (S-W1)	Rotoclone-type scrubber

5.8.1.1 Drying Granulator

The facility operates a drying granulator to dry wet sugar. The drying granulator was manufactured by Link Belt and constructed in 1951. Emissions from the drying granulator are controlled by a rotoclone-type scrubber. The production rate of drying granulator is 1,100 tons sugar per day, per the applicant.

The parameters for the drying granulator's stack are as follows:

Stack Height:	69 ft
Stack Diameter:	2.67 ft
Stack Flow Rate:	16,000 - 18,000 acfm
Stack Exit Temperature:	100°F

5.8.2 Permit Requirement – Visible Emissions – [IDAPA 58.01.01.625, 4/5/00]

5.8.2.1. Applicability

See Permit Condition 1.7.

5.8.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.8.3 Permit Requirement - Process Weight - [IDAPA 58.01.01.702, 4/5/00]

5.8.3.1 Applicability

See Permit Condition 9.1.

5.8.3.2 Monitoring, Recordkeeping, and Reporting

The information in TASCO's 1995 Tier I operating permit application, Appendix G, indicates the maximum PM emission rate for the drying granulator is 8.8 lb/hr ($0.192 \text{ lb/ton sugar} \times 1,100 \text{ tons sugar/day} / 24 \text{ hr/day} = 8.8 \text{ lb/hr}$), which is below the process weight PM emissions limitation of 24.5 lb/hr. Requirements under Permit Conditions 9.2 and 9.3 are sufficient to ensure the permittee complies with the process weight limitation. No throughput monitoring or source testing is necessary.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under permit conditions and general provisions.

5.9 Emissions Unit 9 - Cooling Granulator

5.9.1 Emissions Unit Description

The following table lists the information on the cooling granulator.

Table 5-9: EMISSIONS UNIT INFORMATION

Emission Point/Source Identification	Emissions Unit(s) Identification	Emission Control Device
P-W2	1,100 tons sugar per day cooling granulator (S-W2)	Dustbox type scrubber

The facility operates one cooling granulator to cool hot sugar from the drying granulator, per the application, with a production rate of 1,100 T/day. The cooling granulator is a batch process. The cooling granulator was constructed in 1962. Emissions from the cooling granulator are controlled by a dustbox-type scrubber.

The parameters for the cooling granulator's stack are as follows:

Stack Height:	49 ft
Stack Diameter:	3.08 ft
Stack Flow Rate:	13,000 - 15,000 acfm
Stack Exit Temperature:	90°F

5.9.2 Permit Requirement - Visible Emissions - [IDAPA 58.01.01.625, 4/5/00]

5.9.2.1 Applicability

See Permit Condition 1.7.

5.9.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.9.3 Permit Requirement – Process Weight – [IDAPA 58.01.01.702, 4/5/00]

5.9.3.1 Applicability

See Permit Condition 10.1.

5.9.3.2 Monitoring, Recordkeeping, and Reporting

The information in TASCO's 1995 Tier I OP application, Appendix G, indicates the maximum PM emission rate for the cooling granulator is 23.7 lb/hr (0.516 lb/ton sugar x 1,100 tons sugar/day / 24 hr/day = 23.65 lb/hr), which is below process weight rate emissions limitation of 24.5 lb/hr. As the emission rate from cooling granulator at its maximum throughput rate is 97% of the allowable emission rate, conducting a source test and recording the associated parameters are required under Permit Condition 10.3. Cooling granulator throughput monitoring is required under Permit Condition 10.4.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under permit conditions and general provisions.

Monitoring maintenance procedures for cooling granulators can be found in TASCOS's 1995 Tier I operating permit application, Section 5 (pp. 5-41 to 5-42). This can be used as reference for inspectors.

5.10 Emissions Unit 10 - Pulp Dryer Material Handling Baghouse, Lime Kiln Building Material Handling Baghouses (2), Main Mill Vents, and Sulfur Stove

5.10.1 Emissions Unit Description

Per the application, the pulp dryer material handling baghouse is used to control the dust from the pulp dryer material handling processes. These processes or emissions points are a weight meter belt, a shredded pulp conveyor, the bottom of the shredded pulp elevator, the pellets to storage conveyor, the bottom of the pellet elevator, the top of the pellet elevator, the fines separator rotating screen, the top of rail car loading elevator, and the end of pellet coolers belt. The handling process was constructed prior to 1970. This is a batch process with significant hourly variability; the maximum daily throughput is 469 T/day, per application.

The stack parameters for the pulp dryer material handling baghouse are as follows:

Stack Height:	49 ft
Stack Diameter:	1.3 ft
Stack Flow Rate:	Unknown
Stack Exit Temperature:	Unknown

Per the application, one of the two lime kiln building material handling baghouses is used to control the dust from the following lime kiln building material handling processes or emissions points: the crusher transition, the skip load enclosure, the conveyor to crusher, the lime rock scale hopper, the coke scale hopper, the coke conveyor transfer, the coke bin, the top of the elevator, the transition to the belt, three lime belt connections, the burn rock belt to scroll, the bottom of the conveyor, the crushed lime rock bin, and the crusher pit. The other baghouse is used to control the dust from the processes or emissions points: the lime rock bin, coke east transition, coke west transition, north lime kiln, south lime kiln, and north burnt rock conveyor transition. The handling process was constructed prior to 1970. This is a batch process and with significant hourly variability. The maximum daily throughput is 340 T/day, per the Tier I application.

The stack parameters for lime kiln building material handling baghouses are as follows:

Stack Height:	59.5 ft
Stack Diameter:	2.3 and 2.5 ft, respectively
Stack Flow Rate:	Unknown
Stack Exit Temperature:	Unknown

The thin juice is processed in the main mill. The main mill was constructed prior to 1970. The maximum hourly throughput of the main mill is 105 gallons of thin juice. VOCs are the main emissions from the main mill.

The sulfur stove is used to burn sulfur to generate SO_2 that is used in the juice purification stage. The sulfur stove was constructed prior to 1970. This is a batch process and with significant hourly variability. The maximum daily throughput is 1.8 tons sulfur, per the application. The main emissions from this source are SO_2 .

The following table describes the control device used in controlling emissions from emissions units listed in this section.

Table 5-10 EMISSIONS UNIT INFORMATION

Emission Point/ Source Identification	Emissions Unit(s) Identification	Emission Control Device
P-D4	Pulp dryer material handling (S-D4)	Baghouse (A-D4)
P-K5A	Lime kiln material handling (S-K5)	Baghouse (1, A-K5A)
P-K5B		Baghouse (2, A-K5B)
N/A	Main mill (S-O5)	Vents
P-O6	Sulfur stove (S-O6)	Sulfur tower (A-O6)

5.10.2 Permit Requirement – Visible Emissions – [IDAPA 58.01.01.625 (4/5/00)]

5.10.2.1 Applicability

See Permit Condition 1.7.

5.10.2.2 Monitoring, Recordkeeping, and Reporting

See Permit Condition 1.8.

5.10.3 Permit Requirement - Process Weight - [IDAPA 58.01.01.702 (4/5/00)]

5.10.3.1 Applicability

See Permit Condition 11.1.

5.10.3.2 Monitoring, Recordkeeping, and Reporting

The allowable process weight limitations were calculated using equations listed in IDAPA 58.01.01.702. They were 19.46 lb/hr for the pulp dryer material handling baghouse and 17.84 lb/hr for the lime kiln material handling baghouses. The emission factor of 0.04 lb/ton was used to estimate the emissions from the pulp dryer material handling baghouse. The emissions from the pulp dryer material handling baghouse are 0.78 lb/hr, which is less than 5% of the allowable emissions limit. The emissions factor of 0.023 lb/ton was used to estimate the emissions from the lime kiln material handling baghouse. The emissions factor is from the baghouse capturing sawdust in the lumber facility and is the best available information at this point. The emissions from the lime kiln material handling baghouse is 0.33 lb/hr, which is less than 2% of the allowable emissions limit. The emissions factor was taken from AP-42 Table 11.17-4.

As long as the permittee remains in compliance with Permit Conditions 11.2, 11.3, and 11.4, there is no possibility for the baghouses to exceed the process weight. No monitoring of throughput is necessary.

As specified in the permit, the permittee is required to record and keep records in accordance with Permit Condition 1.11, and report in accordance with requirements under permit conditions and general provisions.

6. INSIGNIFICANT ACTIVITIES

Appendix C of the Tier I operating permit 1995 application lists the proposed insignificant sources. These activities/sources have been declared insignificant in accordance with IDAPA 58.01.01.317.01.(a). and/or (b), per the application. These emissions units are not listed in the Tier I operating permit, but are incorporated here by reference. While there are no specific monitoring requirements in the permit for insignificant emissions units at this facility, these units must comply with all applicable federal, state, and local requirements.

The sugar-handling baghouse does not qualify as an insignificant activity as the uncontrolled emissions from the sugar handling is greater than 10% of the significant level. However, the requirements for this small emission unit are the same as the requirement for all other insignificant activities.

7. COMPLIANCE PLAN AND COMPLIANCE CERTIFICATION

7.1 Compliance Plan

TASCO certified compliance with all applicable requirements. No compliance plan was submitted.

7.2 Compliance Certification

TASCO will be required to periodically certify compliance in accordance with General Permit Provision 13.21.

8. REGISTRATION FEES

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees apply, in accordance with IDAPA 58.01.01.387.

9. AEROMETRIC INFORMATION RETRIEVAL SYSTEM (AIRS) FACILITY SUBSYSTEM

Table 9-1: AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

AIR PROGRAM	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A - Attainment U - Unclassifiable N - Nonattainment
POLLUTANT							
SO ₂	A	A	A			A	U
NO _x	A	A	A			A	U
CO	A	A				A	U
PM ₁₀	A	A				A	U
PT (Particulate)	A	A	A			A	
VOC	B						U
Acetaldehyde	A					A	
THAP (Total HAPs)	A					A	
			APPLICABLE SUBPART				
			D				

AIRS/AFS CLASSIFICATION CODES:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

10. RECOMMENDATION

Based on the Tier I operating permit application and review of the federal regulations and state rules, staff recommends DEQ issue proposed Tier I operating permit No. 083-00001 for 45-day EPA review.

SYC:BR/bh Project No.T1-9505-063-1

G:\Air Quality\Stationary Source\SS Ltd\T1\TASCO Twin\EPA Review\T1-9505-063-1 Tech Memo.doc

Attachments

APPENDIX A

Potential to Emit HAPs and Other Criteria Pollutants

Technical Memorandum

**TASCO, TWIN FALLS,
Criteria Pollutants,**

Per Tier I Operating Permit Application Dated February 3, 1999.

Tons/ year	Foster Wheeler Boiler	B & W Boiler	Keeler Boiler	Dryer	Pellet Cooler No. 1	Pellet Cooler No. 2	Pulp Dryer Material Handling	Drying Granulator No. 1	Cooling Granulator No. 2	South Lime Kiln	North Lime Kiln	Process Slaker	Material Handling and Crushing	Sulfur Stove	Total
PM ¹	138	265	9.5	212	67	67	86	118	118	51.6	79.2	54.1	77.9		
PM ₁₀ ²	138	265	9.5	212	67	67	86	118	118	51.6	79.2	54.1	77.9		
SO ₂ ³	1648	2050	0.3	871						2	4.6			30	
CO ⁴	343	47	15	193						1284	2997				
NO _x ⁵	962	1226	61	258						2.4	5.5				
VOC ⁶	4.8	4	1.2	20						0.12	0.27				

¹ Particulate matter

² Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

³ Sulfur dioxide

⁴ Carbon monoxide

⁵ Nitrogen oxides

⁶ Volatile organic compounds

TASCO, TWIN FALLS

Hazardous Air Pollutants

Per Tier I Operating Permit Application dated February 3, 1999.

Tons per Year ¹	Foster Wheeler Boiler	B & W Boiler	Keeler Boiler	Dryer	South Lime Kiln	North Lime Kiln	Main Mill	Total
Lead	2.00E-05	2.30E-05		1.30E-02	8.10E-04	1.90E-03		0.02
Acetaldehyde		3.00E-02	1.10E-02	4.2			16	20.24
Acrolein		1.30E-02	4.80E-03				9.70E-02	0.11
Arsenic	3.30E-03	8.10E-03		1.20E-01	7.20E-03	1.70E-02		0.15
Benzene		1.50E-02	5.70E-03	2.10E-03				0.02
Beryllium	1.30E-03	1.80E-04		1.30E-03	7.70E-05	1.80E-04		0.00
Cadmium	2.60E-04	3.40E-03		5.50E-04	3.40E-05	7.80E-05		0.00
Chromium	4.90E-02	1.30E+00		6.90E-02	4.20E-03	9.80E-03		1.38
Form aldehyde		3.50E-02	1.30E-02				2	2.05
Manganese	2.90E-02	7.80E-01		8.30E-03	5.00E-04	1.20E-03		0.79
Mercury	4.30E-05	4.80E-03		4.70E-02	2.90E-03	6.60E-03		0.06
Methyl Ethyl Ketone				1.60E+00			1.40E-03	1.60
Naphthalene		2.10E-01	7.80E-02	9.50E-02				0.38
Nickel	7.20E-02	5.50E-01		3.30E-02	2.00E-03	4.70E-03		0.59
POM ¹	3.70E-02	2.10E-02	7.80E-03	9.50E-03	1.30E-04	3.00E-04		0.04
Propylene		2.30E-01	8.70E-02	1.10E-01				0.43
Toluene		5.00E-03	1.90E-03	2.30E-03				0.01
Xylenes		1.90E-03	7.00E-04	8.40E-04				0.00
Total								27.89

¹ Polycyclic organic matter

APPENDIX B

Boiler Operating Data

Technical Memorandum

TASCO, Twin Falls

Foster Wheeler Boiler Coal-fired Boiler

Maximum firing capacity:	280	Btu/hr ¹	Permit 13-1480-0001-01			
Enthalpy increase per lb water to steam	1144	Btu/lb	(1325-180)=1144 btu/lb			
Heat content of per lb steam	1325	Btu/lb	*In application Appendix G p.1, it was 1140 btu/lb			
Heat content of per lb of feed water	180	Btu/lb	*Assume: 1 atm, 212 F sat. feed water			
Inspection report date:	5/18/1999	1/15/1997	1/18/1996	4/20/1994	1/22/1992	Average Per inspection reports
Steaming rate (lb/hr):	200000	170000	180000	140000	140625	
Steam temp (F)	630	670	652	608	610	634
Steam pressure (psi) ²					400	
Drum pressure (psi)	425	420	415	402		416
Percent oxygen	6.5%	4.2%	4.1%	4.6%	6.0%	
Heat output (MMBtu/hr) ³	229	195	206	160	161	
Actual heat input (MMBtu/hr)	274	233	246	192		

Data from source test report for Foster Wheeler boiler

Source test date:	Coal-fired	11/15/1976	1/3/1986	12/12/1994
Average heat input per coal consumption:	MMBtu/hr	277	163	261.45
Average steam output:	lb/hr	202,230	120750	184000
Heat output MMBtu/hr:		231	138	210
Boiler efficiency %		84%	85%	80%

¹British thermal units per hour

²Pounds per square inch

³Million British thermal units per hour

B & W Boiler

Maximum firing capacity:	285	Btu/hr ¹				Permit 13-1480-0001-02
Enthalpy increase per lb water to steam	1072	Btu/lb	(1250-180)=1072	but/lb		*In application Appendix G p.1, it was 1070 btu/lb
Heat content of per lb steam	1252	Btu/lb	steam			Per steam table and data in inspection reports
Heat content of per lb of feed water	180	Btu/lb				
Inspection report date:	5/18/1999	1/15/1997	1/18/1996	4/20/1994	1/22/1992	Per inspection reports
Steaming rate(lb/hr):	155000	135000	145000	110000	115625	
Steam temp (F)	480	515	478	485	480	488
Steam pressure (psi) ²	255		255	278	285	268
Drum pressure (psi)	285	285	250	256		
Percent oxygen	6.0%	3.8%	6.3%	8.0%	5.5%	
Heat output (MMBtu/hr) ³ :	166	145	155	118	124	
Actual heat input (MMBtu/hr)	239	208	223	169	178	Comment: coal or NG fired boiler

Data from source test for B & W Boiler	Fired by coal				
Source test date:		11/19/1976	10/18/1994	12/29/1994	12/27/1994
Average heat input per coal consumption:	MMBtu/hr	280	174.51	186.9	189
Average steam output:	lb/hr	181,545	133000	134000	141500
Actual heat output MMBtu/hr:		195	142	143	151
Boiler efficiency %		70%	82%	77%	80%

¹British thermal units per hour

²Pounds per square inch

³ Million British thermal units per hour

APPENDIX C

Response to Public Comments

Technical Memorandum

TASCO, Twin Falls

October 16, 2002

**STATE OF IDAHO
DEPARTMENT OF ENVIRONMENTAL QUALITY
RESPONSE TO PUBLIC COMMENTS
ON DRAFT AIR QUALITY TIER I OPERATING PERMIT
FOR THE AMALGAMATED SUGAR COMPANY, TWIN FALLS, IDAHO**

Introduction

As required by IDAPA 58.01.01.364 of the *Rules for the Control of Air Pollution in Idaho (Rules)*, the Idaho Department of Environmental Quality (Department) provided for public notice and comment, including a public hearing, on the draft Tier I operating permit for The Amalgamated Sugar Company (TASCO) facility located in Twin Falls, Idaho. Public comment packages, which included the application materials, the draft permit, and associated technical memorandum, were made available for public review at the Twin Falls Public Library, and the Department's State Office in Boise and Regional Office in Twin Falls. The public comment period was provided from August 13, 2002 through September 13, 2002. A public hearing was held on September 12, 2002 at the College of Southern Idaho in Twin Falls, Idaho. Written comments were received from the Idaho Conservation League and TASCO. Those comments regarding the air quality aspects of the permits are provided below with the Department's response immediately following.

Public Comments and Department Responses

Comment 1: **Failure to Improve Air Quality/ More Stringent Emissions Limits Needed**

The Idaho Conservation League submitted comments stating that the total amount of permitted emissions limits for the facility is unacceptably large and fails to maintain and protect airshed quality. Other comments submitted by the Idaho Conservation League state that the Department should include emission limits for all relevant pollutants and/or additional control equipment for each emission unit.

Response to 1: The Department is charged by the Environmental Protection and Health Act, Idaho Code § 39-10, to operate a program to issue air pollution permits in accordance with the *Rules*. The purpose of the air program is to safeguard Idaho's air quality by limiting and controlling the emissions of air contaminants from air pollution sources. The Department carefully evaluates facility plans for construction and/or operation of these sources to ensure all are capable of meeting applicable state and federal air quality standards. The draft permit has been developed in accordance with the *Rules* and satisfies the requirements therein.

The Tier I permitting process is not intended to establish any new applicable requirement (i.e., emissions rate limits) for a facility. In accordance with IDAPA 58.01.01.322.01-03, the Tier I permit contains only existing applicable requirements (refer to IDAPA 58.01.01.008.03 for a definition of "applicable requirement"). No changes have been made to the Tier I permit in regard to these comments.

For more information on the Tier I permitting process, please refer to the U.S. Environmental Protection Agency (EPA) memo entitled "White Paper for Streamlined Development of Part 70 Permit Applications", dated July 10, 1995.

Comment 2: **Prevention of Significant Deterioration Applicability**

The Idaho Conservation League submitted a comment stating that the Tier I permit should contain Prevention of Significant Deterioration (PSD) provisions because of the volume of pollutants emitted by the facility.

Response to 2:

In accordance with IDAPA 58.01.01.006.36, TASCO is an existing facility with respect to the provisions of PSD, as it was constructed prior to the development of the PSD program. Although TASCO is subject to the requirements of PSD, due to a potential to emit regulated pollutants at rates greater than 250 tons per year, it does not appear that the facility has triggered applicable PSD requirements based on information currently available. The PSD provisions are part of the New Source Review program, and regulate new or modified sources. The Department administers the New Source Review program in accordance with IDAPA 58.01.01.200-228; the PSD provisions are contained in Section 205.

In order to trigger PSD, TASCO would have to initiate a major modification. A major modification is defined as any physical change or change in the method of operation that would result in a significant net emissions increase of any regulated air pollutant. The Department currently has no information indicating that a major modification has occurred at the facility; therefore, it is inappropriate to include PSD provisions in the Tier I permit. The permit has not been changed in response to this comment.

Comment 3: **Failure to Disclose Pollutants**

The Idaho Conservation League submitted a comment stating that the Department had failed to include a thorough breakdown of all pollutants emitted by the facility, and requests that the permits be amended to include this information.

Response to 3:

IDAPA 58.01.01.321-336 contains requirements for the content of Tier I permits. These sections of the *Rules* do not require that the Department include an inventory of all pollutants emitted from the facility. No changes have been made to the Tier I permit in regard to this comment.

IDAPA 58.01.01.314.04 requires that the facility identify and describe all emissions of regulated pollutants from each emissions unit within the Tier I permit application. Appendix A of the technical memorandum contains a summary of potential emissions rates for toxic air pollutants (TAPs) and criteria pollutants that was taken directly from the Tier I permit application.

Comment 4: **Toxic Air Pollutants Applicability**

The Idaho Conservation League submitted comments indicating that the Department has failed to limit emissions of toxic air pollutants (TAPs) in accordance with IDAPA 58.01.01.161, 585, and 586.

Response to 4:

Refer to the response to Comment No. 1. The Tier I permit is not intended to establish any new applicable requirement (i.e., emissions rate limits) for a facility. In accordance with IDAPA 58.01.01.322.01-03, the Tier I permit contains only existing applicable requirements (refer to IDAPA 58.01.01.008.03 for a definition of "applicable requirement"). The Tier I permitting process is not intended as a forum for evaluating impacts or limiting the emissions rates of TAP emissions. No changes have been made to the Tier I permit in regard to these comments.

Comment 5: **Failure to Call for Best Available Retrofit Technology**

The Idaho Conservation League submitted a comment stating that the Department should redraft the permits to require TASCO to upgrade the abatement devices on each of its emission units.

Response to 5:

Certain sources at the facility may be subject to Best Available Retrofit Technology (BART); however, there are no applicable requirements for BART at this time. Requirements may be included in Idaho's regional haze implementation plan when submitted to the EPA. The requirements for BART are found under the regional haze rule in 40 CFR Part 51.308. The Tier I permit has not been changed in response to this comment.

Also refer to the response to Comment No. 1. The Tier I permitting process is not the appropriate forum for requiring additional or upgraded control equipment at the facility.

Comment 6: **Permit Duration**

A comment submitted by the Idaho Conservation League states that the Tier I permit does not contain an expiration date.

Response to 6:

The draft Tier I permit submitted for public comment does not contain an expiration date because the permit has not been issued as a final permit. In accordance with IDAPA 58.01.01.322.13, the permit term will be a five-year period, beginning upon the date of issuance. At such time as the permit is issued as final permit, the issuance date and expiration date will appear on the first page of the permit, and in headers throughout the permit.

Comment 7: **Ammonia Emissions**

A comment submitted by the Idaho Conservation League states that the Tier I permit does not control, restrict, or decrease ammonia emissions from TASCO. The comment also points out deleterious health and environmental impacts of ammonia.

Response to 7:

Refer to the response to Comment No. 1. The Tier I permit is not intended to establish any new applicable requirement (i.e., emissions rate limits) for a facility. In accordance with IDAPA 58.01.01.322.01-03, the Tier I permit contains only existing applicable requirements (refer to IDAPA 58.01.01.008.03 for a definition of "applicable requirement"). The Tier I permitting process is not intended as a forum for evaluating impacts or limiting the emissions rates of TAP emissions. No changes have been made to the Tier I permit in regard to this comment.

Comment 8: **National Ambient Air Quality Standard Compliance for Particulate Matter with an Aerodynamic Diameter of Ten Microns or Less, Sulfur Dioxide, and Nitrogen Oxides**

A comment submitted by the Idaho Conservation League states that the Tier I permit fails to specify the means for bringing impacts of particulate matter with an aerodynamic diameter of ten microns or less (PM₁₀), sulfur dioxide (SO₂), and Nitrogen Oxides (NO_x) from TASCO into compliance with the National Ambient Air Quality Standards (NAAQS). A second comment submitted by the Idaho Conservation League states that the Department should require ambient monitors for nitrogen oxides and other pollutants.

Response to 8: The Department has no evidence that TASCO is out of compliance with NAAQS for PM₁₀, SO₂, or nitrogen dioxide. Additionally, the Tier I permit is not intended to establish any new applicable requirement (i.e., emissions rate limits or ambient monitoring requirements) for a facility (refer to the response to Comment No. 1). The permit has not been changed as a result of these comments.

Comment 9: **Low-Sulfur Coal**

A comment submitted by the Idaho Conservation League states that Department should go beyond the requirements of IDAPA 58.01.01.729 and require that TASCO use only low-sulfur coal.

Response to 9: Refer to the response to Comment No. 1. Section 729 of the *Rules* specifies a 1%-maximum standard for coal. This is an applicable requirement for the Tier I permit and has been included in the draft Tier I permit. The permit has not been changed to incorporate this comment.

Comment 10: **Hazardous Air Pollutant Re-opener**

The Idaho Conservation League submitted a comment in regard to the draft Tier I permit requesting "...a 're-opener clause' to allow the permit to be re-opened when [the Department] does finally propagate additional [hazardous air pollutant] standards and guidelines."

Response to 10: Permit Condition 13.15 in the draft Tier I General Provisions states:

"The permittee shall comply with applicable requirements that become effective during the permit term on a timely basis."

No changes have been made to the Tier I permit in regard to this comment.

Comment 11: **Visible Emissions Inspections Requirements**

TASCO submitted a comment requesting that the facility-wide visible emissions inspections (Facility-wide Condition 1.8 in the draft Tier I permit) be removed from the Tier I permit. TASCO notes that this provision would extend to insignificant sources, and would entail "...significant amounts of recordkeeping and monitoring".

Response to 11:

Permit Condition 1.8 is intended to demonstrate compliance with Permit Condition 1.7 of the Tier I permit. Permit Condition 1.7 is taken from IDAPA 58.01.01.625, which applies to "any point of emission". All emissions sources, including insignificant activities, are required to comply with this section of the *Rules* unless specifically exempted by the conditions set forth in subsection 625.03.

The purpose of Permit Condition 1.8 is to reduce burdensome requirements associated with opacity monitoring of small sources that would generally not have any visible emissions. Thus a monthly inspection is required. In accordance with Permit Condition 1.8, the inspection is intended as see/no see evaluation for each potential source. If visible emissions are noted, the permittee must either take corrective action or perform a Method 9 visible emissions evaluation.

The Tier I permit has not been changed in response to this comment.

Comment 12:

Compliance Test Methodology

TASCO submitted a comment requesting that Permit Condition 1.15 of the draft Tier I permit be revised to include EPA Method 5B as an approved method to measure PM.

Response to 12:

Although EPA Method 5B may be an appropriate test methodology for certain sources under specific conditions (i.e., coal-fired boilers), the method is not appropriate for all PM compliance testing demonstrations. Permit Condition 1.15 specifies EPA Method 5 or a Department-approved alternative. Should TASCO desire to use an alternate method, the specified method and sufficient justification for the alternative method should be submitted for Department approval in a test protocol (refer to Permit Condition 1.20), prior to conducting the test. The Tier I permit has not been changed in response to this comment.

As discussed in EPA Method 5B Section 1.1, Applicability, *"This method is to be used for determining nonsulfuric acid particulate matter from stationary sources. Use of this method must be specified by an applicable subpart, or approved by the Administrator, U.S. Environmental Protection Agency, for a particular application."* Department staff recommends TASCO work with EPA to make a final decision on the applicability of Method 5B.

Comment 13:

Performance Test Reporting Requirements

TASCO submitted a comment requesting a 60-day requirement for submission of source test results after completion of the test. The draft Tier I permit specifies 30 days (Facility-wide Condition 1.20).

Response to 13:

In accordance with IDAPA 58.01.01.157.04, any source test performed to satisfy a requirement imposed by a state permit must be submitted to the Department within 30 days of completion of the test. Therefore, this permit condition has not been changed. If TASCO finds that it needs more than 30 days to submit the results of a performance test, it may request that the Department grant an extension.

Comment 14: **Firing Capacity Limit**

TASCO submitted a comment stating that maximum firing rate was not a permit limit in Permit No. 13-1480-0001-01, dated March 19, 1981, but a descriptive narrative; therefore, Permit Condition 2.42 in the draft Tier I permit and associated monitoring/recordkeeping should be deleted.

Response to 14: The Department has reviewed the terms and conditions of Permit No. 13-1480-0001-01. It appears that the maximum firing rate listed in the permit was, in fact, a descriptive narrative used to identify the boiler. This determination is further reinforced by the fact that the permit contains no means for demonstrating compliance with a firing rate limit. Therefore, Permit Condition 2.42 has been removed from the Tier I permit. Permit Condition 2.46 of the draft Tier I permit contains the monitoring and recordkeeping requirements used to demonstrate compliance with Permit Condition 2.42. Since Permit Condition 2.42 has been removed for the permit, Permit Condition 2.46 has also been removed from the permit.

Comment 15: **Opacity Standards for Unit No. S-B1**

TASCO submitted a comment stating that opacity standards are established by Permit Condition 2.1; therefore Permit Condition 2.41 should be deleted from the Tier I permit.

Response to 15: Permit Condition 2.1 contains the opacity standard established by the New Source Performance Standard (NSPS) required for the Foster Wheeler boiler (Unit No. S-B1), while Permit Condition 2.41 contains the opacity standard established by IDAPA 58.01.01.625 for all sources in Idaho. Both opacity standards are applicable requirements in accordance with IDAPA 58.01.01.008.03; therefore, both requirements must be contained in the Tier I permit. The permit has not been changed as a result of this comment.

As stated in the technical memorandum, the continuous opacity monitor required by the NSPS provisions (Permit Condition 2.4 in the draft Tier I permit) serves as a monitor for compliance with both opacity standards.

Comment 16: **New Source Performance Standard Requirements for Unit No. S-B1**

TASCO submitted several comments in regard to the NSPS requirements contained in the draft Tier I permit for the Foster Wheeler boiler. Specifically, TASCO requested that:

1. The language "or Department-approved alternative" be added to the list of test methods specified in the first bullet of Permit Condition 2.5;
2. The span values be changed to 1000 ppm for SO₂ and 500 ppm for NO_x in Bullet 3 of Permit Condition 2.5;
3. The method currently used by TASCO for the F-factor be specified in the permit;
4. Initial source testing requirements be deleted from the permit because these requirements have been fulfilled.

Response to 16: The language in the NSPS section of the Tier I permit (Permit Conditions 2.1-2.39) is taken directly from 40 CFR 60.45, and contains the applicable requirements, as stated, for the Foster Wheeler boiler. Each of the four, specific items raised by TASCO is addressed below.

It is not appropriate for the Department to approve test methods that are not approved by 40 CFR 60.45.

The span values in the draft Tier I permit are the values specified for a solid (i.e., coal) fossil fuel-fired boiler in 40 CFR 60.45(c)(3). The values requested by TASCO are specified for gas fossil fuel-fired boilers, and are not appropriate for the Foster Wheeler boiler.

The method currently used by TASCO for determining the value of the F-factor is specified in Subsection 5 of Bullet 7 in Permit Condition 2.5 of the draft Tier I permit.

The initial performance test requirements are included in the Tier I permit to maintain the integrity of the NSPS provisions. The Department acknowledges that TASCO has fulfilled these provisions, but recommends that TASCO maintain on-site records demonstrating that compliance with these provisions has been fulfilled.

The Tier I permit has not been changed as a result of these comments.

Comment 17: **Baghouse Pressure Drop Requirements for Unit No. S-B1**

TASCO submitted a comment requesting that the baghouse pressure drop be increased to a range of 1.0-10.0 inches of water. The facility submitted two months of operational data showing that opacity is less than 5% at a pressure drop of approximately 1.0 inch of water.

Response to 17: The Department has changed the permit to incorporate this request. It should be noted that this change does not release TASCO from compliance with any applicable emissions standard or limit for Unit No. S-B1.

Comment 18: **Firing Capacity Description**

TASCO submitted a comment stating that the maximum firing rate was not a permit limit in Permit No. 13-1480-0001-01, dated March 19, 1981, but a descriptive narrative; therefore, Permit Condition 3.3 in the draft Tier I permit and associated monitoring/recordkeeping should be deleted.

Response to 18: The Department has reviewed the terms and conditions of Permit No. 13-1480-0001-01. It appears that the maximum firing rate listed in the permit was, in fact, a descriptive narrative used to identify the boiler. This determination is further reinforced by the fact that the permit contains no means for demonstrating compliance with a firing rate limit. Therefore, Permit Condition 3.3 has been removed from the Tier I permit. Permit Condition 3.10 of the draft Tier I permit contains the monitoring and recordkeeping requirements used to demonstrate compliance with Permit Condition 3.3. Since Permit Condition 3.3 has been removed for the permit, Permit Condition 3.10 has also been removed from the permit.

Comment 19: **Baghouse Pressure Drop Requirements for Unit No. S-B2**

TASCO submitted a comment requesting that the baghouse pressure drop be increased to a range of 1.0-10.0 inches of water.

Response to 19: The Department has changed the permit to incorporate this request. It should be noted that this change does not release TASCO from compliance with any applicable emissions standard or limit for Unit No. S-B2.

Comment 20: **Flume Slaker (Unit No. S-K4)**

TASCO submitted a comment stating that the flume slaker is an insignificant activity in accordance with IDAPA 58.01.01.317.01(b)i(30), and should be removed from the Tier I permit.

Response to 20: Pollutants emitted from the flume slaker are particulate matter (PM) and PM₁₀. Flume slaker emissions rate of these pollutants are given in Section 3D of TASCO's 1999 Tier I permit application update as 54.1 tons per year of PM and 54.1 tons per year of PM₁₀.

IDAPA 58.01.01.317.01(b)i(30) defines an insignificant activities upon the basis of size or production rate, and specifically applies to an "...emissions unit or activity with emissions less than or equal to ten percent (10%) of the levels contained in Section 006 of the definition of significant...". In accordance with IDAPA 58.01.01.006.92(a), the significant levels for PM and PM₁₀ are 25 tons per year and 15 tons per year, respectively. Therefore, the flume slaker would have to have a potential PM emissions rate of 2.5 tons per year or less and a potential PM₁₀ emissions rate of 1.5 tons per year or less to qualify this unit as an insignificant activity. Based on the information contained in TASCO's application update, this unit is not an insignificant activity, and the permit has not been changed in response to this comment.

Comment 21: **Compliance Testing Requirements for Cooling Granulator (Unit No. S-W2)**

TASCO submitted a comment requesting that the compliance testing requirement for the cooling granulator be removed from the Tier I permit. TASCO also requested that Permit Condition 10.5 (scrubber flowrate monitoring requirements) be deleted from the permit. The performance test is required in Permit Condition 10.3 of the draft permit, and is intended to demonstrate compliance with the process weight rate standard in Permit Condition 10.1.

Response to 21: The Department has reviewed the calculations used to estimate PM emissions in the Title V permit application submitted by TASCO. The Department also reviewed the uncertified source test data submitted by TASCO with this comment.

The emissions calculations use the process weight rate standard (IDAPA 58.01.01.702) to back-calculate a throughput-based emissions factor that is then applied to the design throughput capacity of the granulator to estimate a PM emissions rate. As would be expected, this results in a potential emissions rate estimate that is relatively close to the standard specified in Section 702 of the Rules. The close proximity of potential emissions rate estimates to the process weight rate standard was the reason that the performance test requirement was included in the draft Tier I permit.

Although the source test results submitted by TASCO indicate that PM emissions rates from the granulator are well below the process weight rate standard, this data is uncertified and cannot be used to demonstrate compliance with the process weight rate standard.

Due to the uncertainty associated with the emissions rate estimates for the cooling granulator, the Department maintains that TASCO must conduct a one-time performance test to demonstrate compliance with the process weight rate standard.

The Department maintains that the scrubber flowrate must be monitored and maintained within the ranges established by the O&M manual to assure that the control equipment is functioning properly. This Tier I provision has not been changed.

Comment 22: **Emission Unit Group 10**

TASCO submitted a comment stating that the units in Emission Unit Group 10 are insignificant activities and should be removed from the Tier I permit. Units in this group include the pulp dryer material handling baghouse, lime kiln building material handling baghouses, main mill vents, and the sulfur stove.

Response to 22: Potential emissions rates for these units are given in Section 3D of TASCO's 1999 Tier I permit application update. The comment does not cite a specific section of the *Rules* that qualifies these units as insignificant activities, therefore, the Department has reviewed all relevant section of IDAPA 58.01.01.317 for applicability determinations for these units. Based upon this review, it appears that none of these units qualify as an insignificant activity listed in Section 317. Consequently, the Tier I permit has not been changed in response to this comment.

Comment 23: **Affected States**

TASCO submitted a comment stating that Utah is not an affected state.

Response to 23: The TASCO facility is within 50 miles of Utah's northwestern state line. In accordance with IDAPA 58.01.01.008.01(b), this makes Utah an affected state with respect to the facility. The permit has not been changed in response to this comment.

Comment 24: **Production Rate Monitoring Requirements**

TASCO submitted a comment stating that "production rate monitoring cannot be used to demonstrate compliance with emission standards...There is no regulatory authority or statutory basis to include production rate monitoring and recordkeeping in Title V Operating Permits." TASCO requests the deletion of any condition requiring production rate monitoring as a method of compliance demonstration.

Response to 24: Subsection 322.06(a) of the *Rules* states that all Tier I permits shall contain "sufficient monitoring to ensure compliance with all terms and conditions of the Tier I operating permit." IDAPA 58.01.01.322.06(d) states that, with respect to monitoring, all Tier I operating permits shall contain "requirements that the Department determines are necessary, concerning the use, maintenance and installation of monitoring equipment

or methods." These provisions grant the Department authority to use production rate monitoring as a method for determining compliance with an applicable standard if necessary. IDAPA 58.01.01.322.07(a) grants the Department authority for the recordkeeping requirements. The permit has not been changed as a result of this comment.

For most emissions units, TASCO's 1999 Tier I permit application update utilizes production- or operation-based emissions factors to estimate emissions rates for regulated pollutants. Any performance testing conducted for a source also results in a production- or operation-based emissions factor (e.g., pounds of pollutant per tons of throughput for the dryers). In these cases, the Department maintains that production rate monitoring and recordkeeping is required in order to demonstrate continual compliance with applicable emissions standards. It should be noted that TASCO has the option to propose alternative monitoring methodology for demonstrating continual compliance with applicable emissions standards (e.g., continuous emissions monitoring, continuous opacity monitoring, etc.).

Comment 25: **Operating Requirement Language**

TASCO submitted a comment requesting the removal of certain wording in operational requirements. Specifically, TASCO requested that the terms "in good working order" and "as efficiently as practicable" be removed from operational requirements because these terms are subjective standards.

Response to 25: The Department concurs with this comment. The permit has been changed to incorporate the following language:

"Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Department which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source."

This language eliminates the possibility of inspectors setting subjective standards without further information or investigation. This is the language that is used in 40 CFR 60 and 61, General Provisions.

Comment 26: **Operations and Maintenance Manual Requirements**

TASCO submitted several comments requesting that the requirements for the Operations and Maintenance (O&M) manuals be revised. Specifically, TASCO requests that:

1. Permit language be added specifying that the O&M manuals are specific to the control equipment;
2. The requirement to have Department-approval of the O&M manuals be removed from the permits;
3. Permit language be added specifying that the content of the O&M manuals include 1) the Monitoring and Maintenance Procedures contained in Section 5C of TASCO's Title V permit application, 2) frequency of inspections for control equipment, and 3) parametric monitoring operating ranges and supporting documentation.

Response to 26: The Department concurs with the first request listed in this comment and has changed the Tier I permit accordingly.

The approval of initial O&M manuals and updated control device monitoring programs in the O&M manuals for the B&W boiler and the pulp dryer remain the same. These units represent large sources of criteria pollutant emissions. Department review and approval of the O&M manuals for these emissions units is important. The requirement of O&M manual approval for other emissions units was removed. Corresponding changes were made to the technical memorandum.

The Department has not changed the permit in response to the third request in this comment. A review of the Monitoring and Maintenance Procedures contained in Section 5C of TASCO's Title V permit application indicates that additional items/issues should be addressed within the manuals. Specific monitoring parameters are not clearly defined in the Title V application; any monitoring parameters required in the Tier I permit should be addressed in the manuals. The O&M manuals should also contain additional operational guidance for operators (e.g., start-up, shut-down, and corrective action procedures) that are not addressed in the Title V application. There is no language in the permits that prevents TASCO from using the Title V application material, where appropriate, in the development of O&M manuals; however, it is inappropriate to restrict O&M manual content to items listed in the Title V application.

Comment 27: **Miscellaneous Permit and Technical Memorandum Language and Numbering Comments**

TASCO submitted several comments noting miscellaneous errors and typographical mistakes within the permits. TASCO also suggested some minor language changes within the permit and technical memorandum for the purpose of clarity.

Response to 27: Unless otherwise noted in this document, the Department concurs with TASCO; therefore the suggestions submitted have been incorporated into the permit and technical memorandum where appropriate. The reference errors in the permit have also been corrected.

END OF COMMENTS